

Work Order ID 108431

October-17-13 1:30:42 PM

108431

Page

Item ID: 646.3316

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Blade

Start Date: 10/17/13 Start Qty: 12.00

12

Cust Item ID:

Required Date: 10/17/13 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 13-10-21 Tooling:

Date:

Run

Start

NR1

QC:

Date: SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr								
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646.3300	N/C								
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100		0.00							
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100	BAND SAW								
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	Memo	0.00							
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	Cut Blank at 6.000"								
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JFC 2013-11-03 12 ♂

110		0.00							
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110	HAAS CNC VERTICAL MACHINING #1								
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	Memo	0.00							
--	------	------	--	--	--	--	--	--	--

	1-Machine per folio FB147								
--	---------------------------	--	--	--	--	--	--	--	--

	DWG REV: _____								
--	----------------	--	--	--	--	--	--	--	--

	FOLIO REV: _____								
--	------------------	--	--	--	--	--	--	--	--

orly 17/11 13/11/06 12 ♂

2- deburr and break all sharp edges except otherwise noted

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
			Rework <input type="checkbox"/>	Scrap <input type="checkbox"/>	Use-as-is <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>		
			Work Order Update <input type="checkbox"/>	Machining <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>			
				Large Fab <input type="checkbox"/>	Finishing <input type="checkbox"/>	Composite <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>			
Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector	
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear					General						
					Bending <input type="checkbox"/>	Bend <input type="checkbox"/>	Grain <input type="checkbox"/>	Ovalized <input type="checkbox"/>	Pressure/Forced <input type="checkbox"/>		
Centre Not Concentric to O/S <input type="checkbox"/>	BOM/Route <input type="checkbox"/>	Hardware <input type="checkbox"/>	Over/Under tolerance <input type="checkbox"/>	Temperature/Cure <input type="checkbox"/>							
Cracks <input type="checkbox"/>	Broken/Damaged <input type="checkbox"/>	Inspection Incomplete <input type="checkbox"/>	Part Incorrect <input type="checkbox"/>	Weld <input type="checkbox"/>							
Crushed/Crimped <input type="checkbox"/>	Burrs <input type="checkbox"/>	Instructions Incomplete/Unclear <input type="checkbox"/>	Part Lost/Missing <input type="checkbox"/>	Wrong Stock Pulled <input type="checkbox"/>							
Cuffs <input type="checkbox"/>	Contamination <input type="checkbox"/>	Maintenance <input type="checkbox"/>	Part Moved <input type="checkbox"/>								
Heat Treat <input type="checkbox"/>	Countersink <input type="checkbox"/>	Mislabeled <input type="checkbox"/>	Positioned Wrong <input type="checkbox"/>								
Inspection Strip in Tube <input type="checkbox"/>	Cut Too Short <input type="checkbox"/>	Misread <input type="checkbox"/>	Power Loss/Surge <input type="checkbox"/>	Other <input type="checkbox"/>							
Ripples in Bend <input type="checkbox"/>	Drill Holes <input type="checkbox"/>	Offset <input type="checkbox"/>									
Torque Waves in Extrusion <input type="checkbox"/>	Drawing <input type="checkbox"/>	Out of Calibration <input type="checkbox"/>									
Turning Sequence <input type="checkbox"/>	Finish <input type="checkbox"/>	Out of Sequence <input type="checkbox"/>									
Wave/Twist in Tube <input type="checkbox"/>	Folio <input type="checkbox"/>	Outside Dimensions <input type="checkbox"/>									

Work Order ID 108431

108431

Page 2

October-17-13 1:30:42 PM

Item ID: 646.3316

Accept

N900040100

Setup

Start

NS1

Revision ID:

Stop

NS2

Item Name: Blade

Start Date: 10/17/13

Start Qty: 12.00

12

Cust Item ID:

Required Date: 10/17/13

Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID
120

Operation
Description
QC2- Inspect parts off machine FAI/FAIB

Set Up/
Run Hours
0.00

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC

Quality Control

Memo

0.00

MH

13/11/06

130

QC8- Inspect parts - second check

0.00

DAS
40
9-83

13/11/07

12

Ø

130

QC

Quality Control

Memo

0.00

140

Outsource process - Heat Treat

0.00

140

Outsource

Outsource process - Heat Treat

Memo

0.00

HEAT TREAT AS PER DWG, SEE NOTE #3

ISSUE P/O: 22078

CD 13/11/15 (12)

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS					
Part No. _____	Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>		
NCR No. _____	Work Order Update <input type="checkbox"/>						

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear	General			
Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube <input type="checkbox"/>	Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio <input type="checkbox"/>	Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/>	Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/>	Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/>
<input type="checkbox"/> Other _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____				

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS									
			Rework <input type="checkbox"/>	Scrap <input type="checkbox"/>	Use-as-is <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>						
Part No. _____			Machining <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>							
NCR No. _____			Work Order Update <input type="checkbox"/>	Finishing <input type="checkbox"/>	Composite <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Supplier <input type="checkbox"/>	Other <input type="checkbox"/>							
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance		Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector					
Doc/Data															
Equip/Tooling															
Operator															
Material															
Setup															
Other															
Process															
Supplier															
Training															
Unapproved															
FAULT CATEGORY															
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube				General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions							<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Other			<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled	

Work Order ID 108431

108431

Page 4

October-17-13 1:30:42 PM

Item ID: 646.3316

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Blade

Stop

NS2

Start Date: 10/17/13

Start Qty: 12.00

12

Cust Item ID:

Required Date: 10/17/13

Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

170

170

QC

Quality Control

QC14- Inspect Spray Paint

0.00

12

13/12/10

180

180

Packaging

Packaging

Identify as per dwg & Stock Location: composites 0.00
(Finishing)

0.00

12

13/12/10

190

190

QC

Quality Control

QC21- Final Inspection - Work Order Release 0.00
Memo 0.00

13/12/11

13/12/10

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS					
Part No. _____	Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>		
NCR No. _____							

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear	General			
Bending Centre Not Concentric to O/S Cracks Crushed/Crimped Cuffs Heat Treat Inspection Strip in Tube Ripples in Bend Torque Waves in Extrusion Turning Sequence Wave/Twist in Tube	Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short Drill Holes Drawing Finish Folio	Grain Hardware Inspection Incomplete Instructions Incomplete/Unclear Maintenance Mislabeled Misread Offset Out of Calibration Out of Sequence Outside Dimensions	Ovalized Over/Under tolerance Part Incorrect Part Lost/Missing Part Moved Positioned Wrong Power Loss/Surge	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled
				Other

Picklist Print

October-17-13 1:30:41 PM

Page 1

Work Order ID: 108431

Parent Item: 646.3316

Start Date: 10/17/13

Required Date: 10/17/13

Parent Item Name: Blade

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP REV:A NEW ISSUE 12/11/07 JFS VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MSTEEL-A2- B0.500X1.250		Purchased	No			100	f	161.6855	0.5	6.3157896			

AISI A2 TOOL STEEL BAR, 0.500 X 1.250

Location	Loc Qty	Loc Code
MAT009	161.6855001	
123250	0.0000001	
125350	0.5946	
<u>M126166</u>	42.6909	
M126438	118.4	

6.3157896 JFC 20B-11-03

NCR: Yes / No

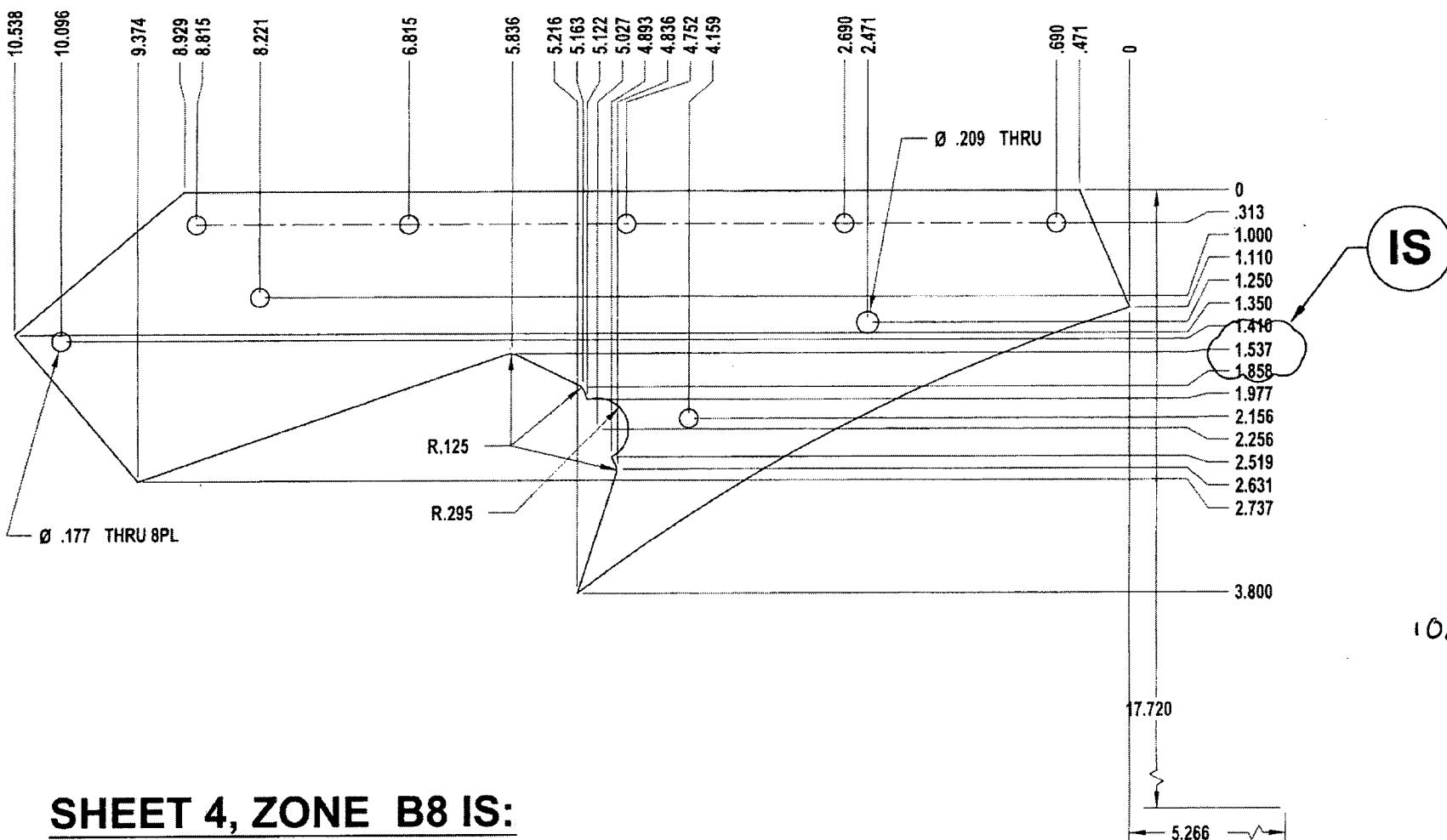
DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
			Rework <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>				
			Scrap <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>				
			Use-as-is <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>				
			Work Order Update <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube				General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions							
				<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Other							
				<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled							

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 03724				SHEET 1 OF 1		
	DWG NO. 646.3300		REV: N/C	PREPARED BY B. PETERS	DATE: 12/05/12		EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.
	DWG TITLE: UPPER CUTTER ASSY						
	APPROVED BY:	ENGR: <i>J. Brann</i>	MFG: <i>David Baker</i>	QC: <i>[Signature]</i>	EFF: NEXT ORDER		
TRANSACTION CODES (TC) A-ADD C-CREATE R-REVISE D-DELETE		REASON: REVISED ORDINATE DIMENSION.			ECR: D-12-025		

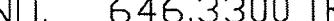
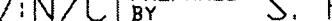


SHEET 4, ZONE B8 IS:

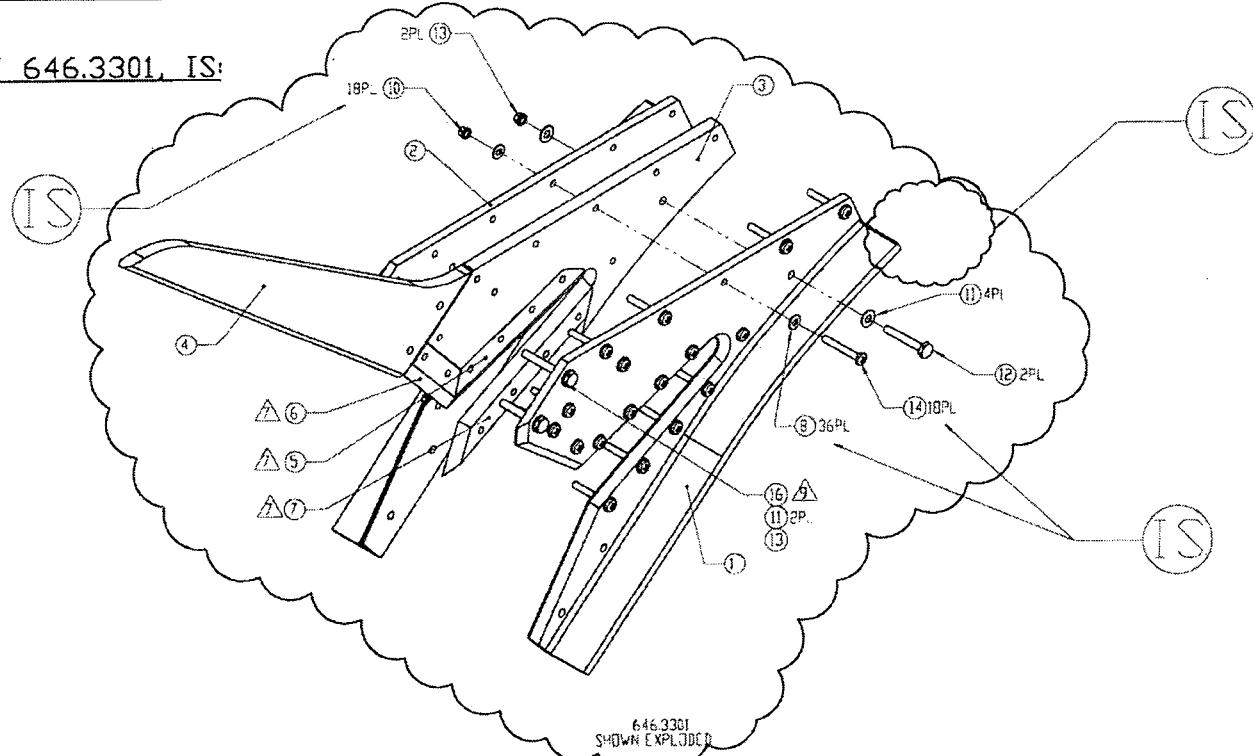
DOCUMENTS EFFECTED:	<input type="checkbox"/> RFMS <input type="checkbox"/> MDL <input type="checkbox"/> INSTALL INSTRUC <input type="checkbox"/> ICA <input type="checkbox"/> BOM	CHANGE CATEGORY <input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR	DER REVIEW REQUIRED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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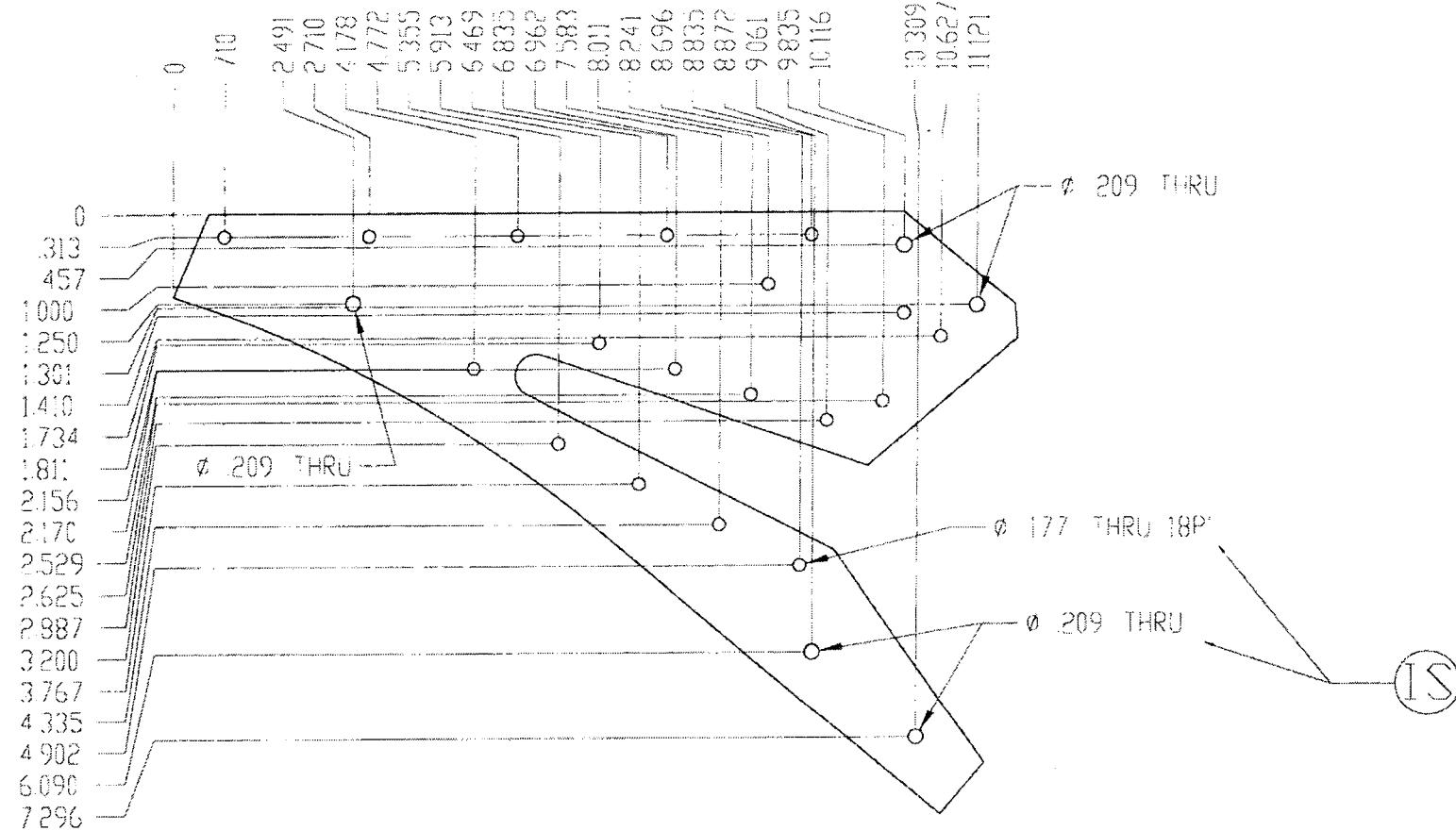
10843

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 02196				SHEET 1 OF 2	
	DWG NO. 646.3300	REV:N/C	PREPARED BY S. HUFF	DATE: 01/05/09	EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.	
DWG TITLE: UPPER CUTTER ASSY						
APPROVED BY:	ENGR 	MFG 	QC 	EFF:	NEXT ORDER	
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: REMOVED RIVETS IN FAVOR OF ADDITIONAL SCREWS					

SHEET 1, VIEW 646.3301, IS:



14	R	601.2765		18	SCREW	MS27039-0819					
10	R	601.1541		18	LOCKNUT	MS21042L08					
9	D	601.2766		3	RIVET	MS20470AD5-18					
8	R	601.2764		36	WASHER	NAS1149FN832P					
				.3301							
F/N	TC	PART NUMBER	QTY	DESCRIPTION		MATERIAL/SPECIFICATION					
DOCUMENTS EFFECTED:				<input type="checkbox"/> MDL	<input checked="" type="checkbox"/> INSTALL INSTRUC	<input checked="" type="checkbox"/> ICA	<input type="checkbox"/> FMS	<input checked="" type="checkbox"/> BOM	<input type="checkbox"/> MAJOR	<input checked="" type="checkbox"/> MINOR	DER REVIEW REQUIRED
				<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO						

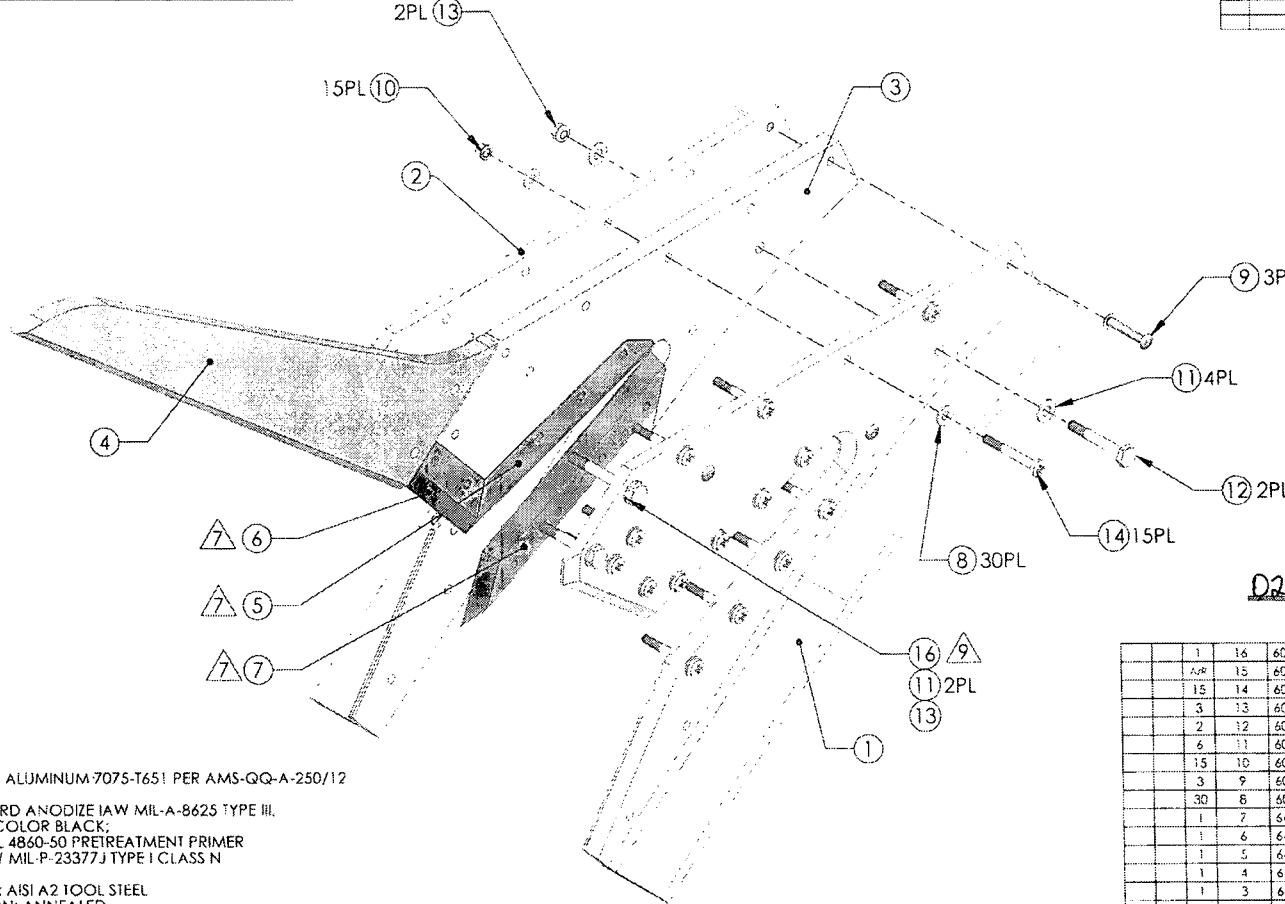
SHEET 3, SECTION VIEW A-A, IS:

SECTION A-A [P/6]

F/N	T/C	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

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REMARKS		DATE	APPROVED
ISSUE	DESCRIPTION		



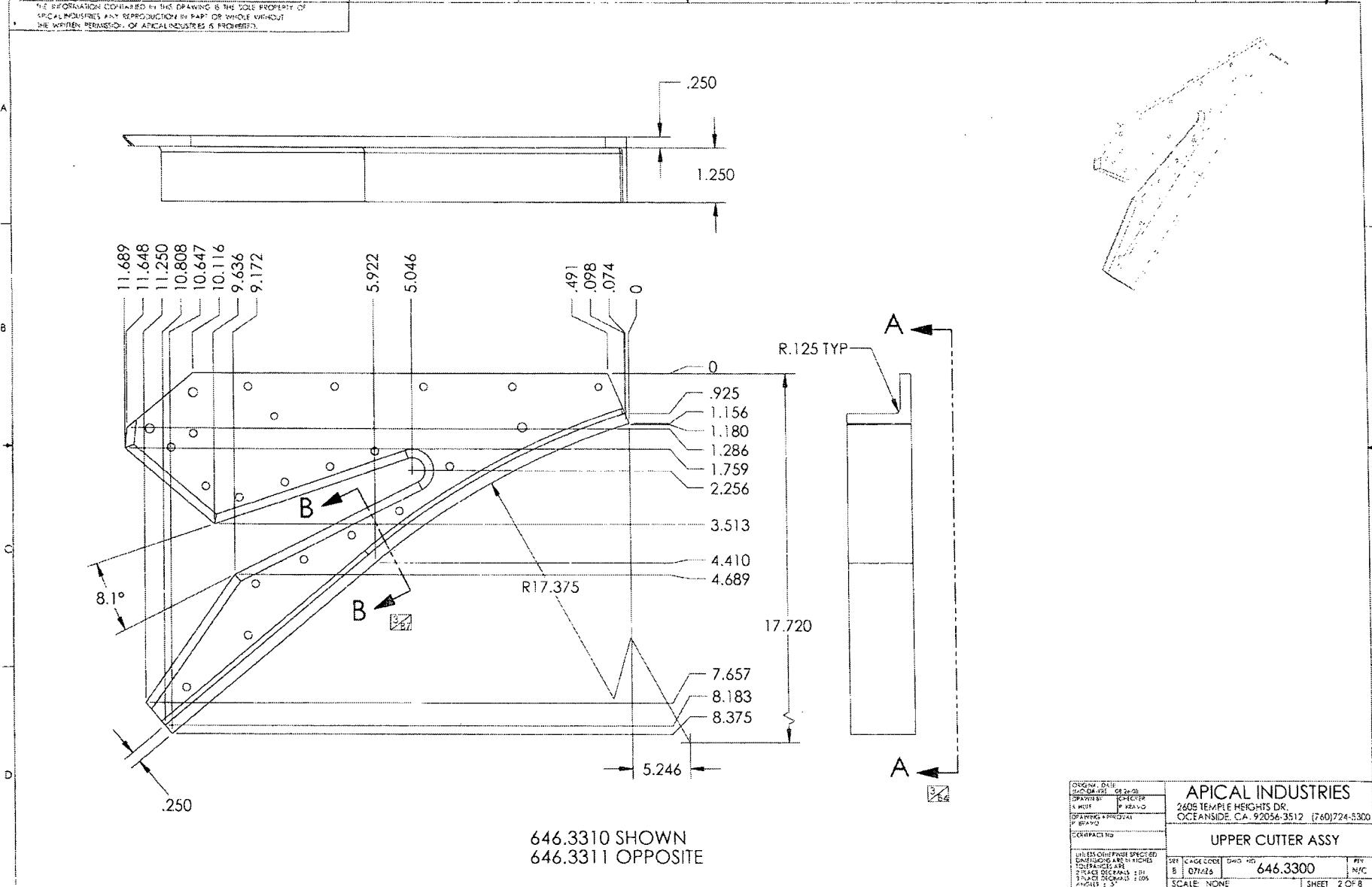
UNINCORPORATED ECN(s)

D2196, D372

NOTES:

- ⚠ MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12**
 - ⚠ FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III,
CLASS 2, COLOR BLACK;
CARDINAL 4850-50 PRETREATMENT PRIMER
PRIME IAW MIL-P-2337J TYPE I CLASS N**
 - ⚠ MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS**
 - ⚠ FINISH: PRIME IAW MIL-P-2337J TYPE I CLASS N**
 - 5. DEBUR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED**
 - 6. IDENTIFY IAW MPP-120**
 - ⚠ APPLY F/N 15 AS REQUIRED TO ALL FAYING SURFACES OF F/N 5, 6 & 7**
 - ⚠ CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE**
 - ⚠ INSTALL FASTENER FINGER-TIGHT**

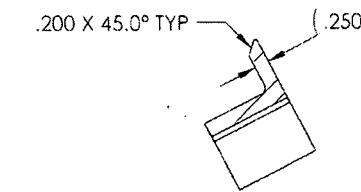
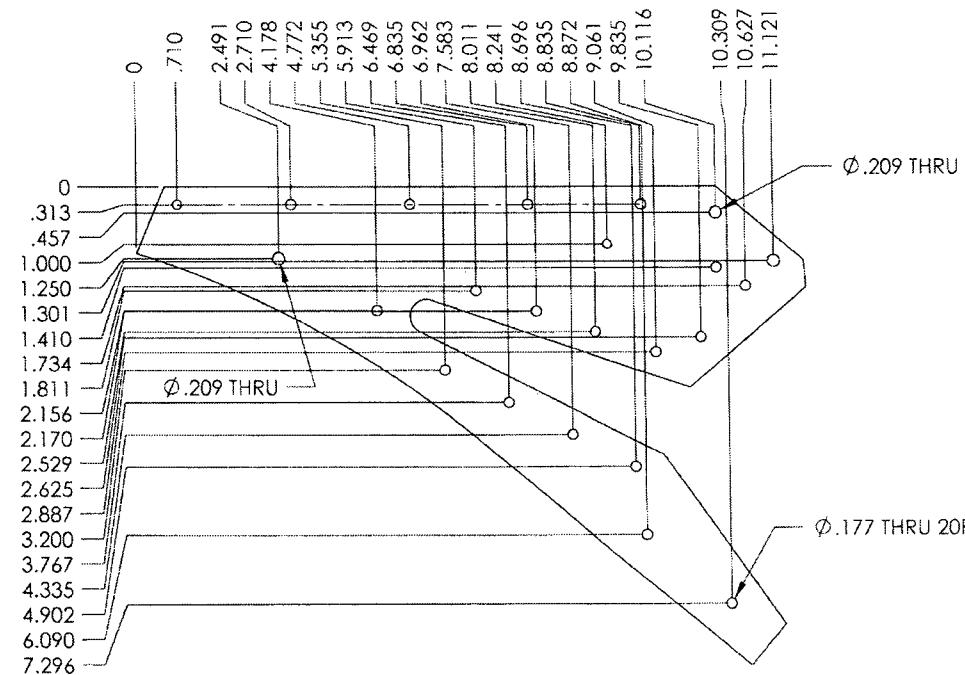
646.3301
SHOWN EXPLODED



ORIGINAL DATE	07/02/02	REVISED DATE	07/02/02
DRAWN BY	W. KELLOGG	DESIGNED BY	
SUPERVISED BY		APPROVED BY	
PRINTED BY		PRINTED ON	
DRAWING NO. 646.3300			
SHEET 1 OF 8			
ALL DIMENSIONS ARE IN INCHES			
UNLESS OTHERWISE SPECIFIED			
DIMENSIONS ARE INCHES			
TOLERANCES ARE			
.010 UNLESS OTHERWISE SPECIFIED			
INCH GEOMETRIC TOLERANCES			
NOTES:			
SCALE	CAGE CODE	PHOTO NO.	REV.
1:1	07/02/02	646.3300	N/C
SCALE NONE			1 SHEET 2 OF 8

108431

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SECTION B-B

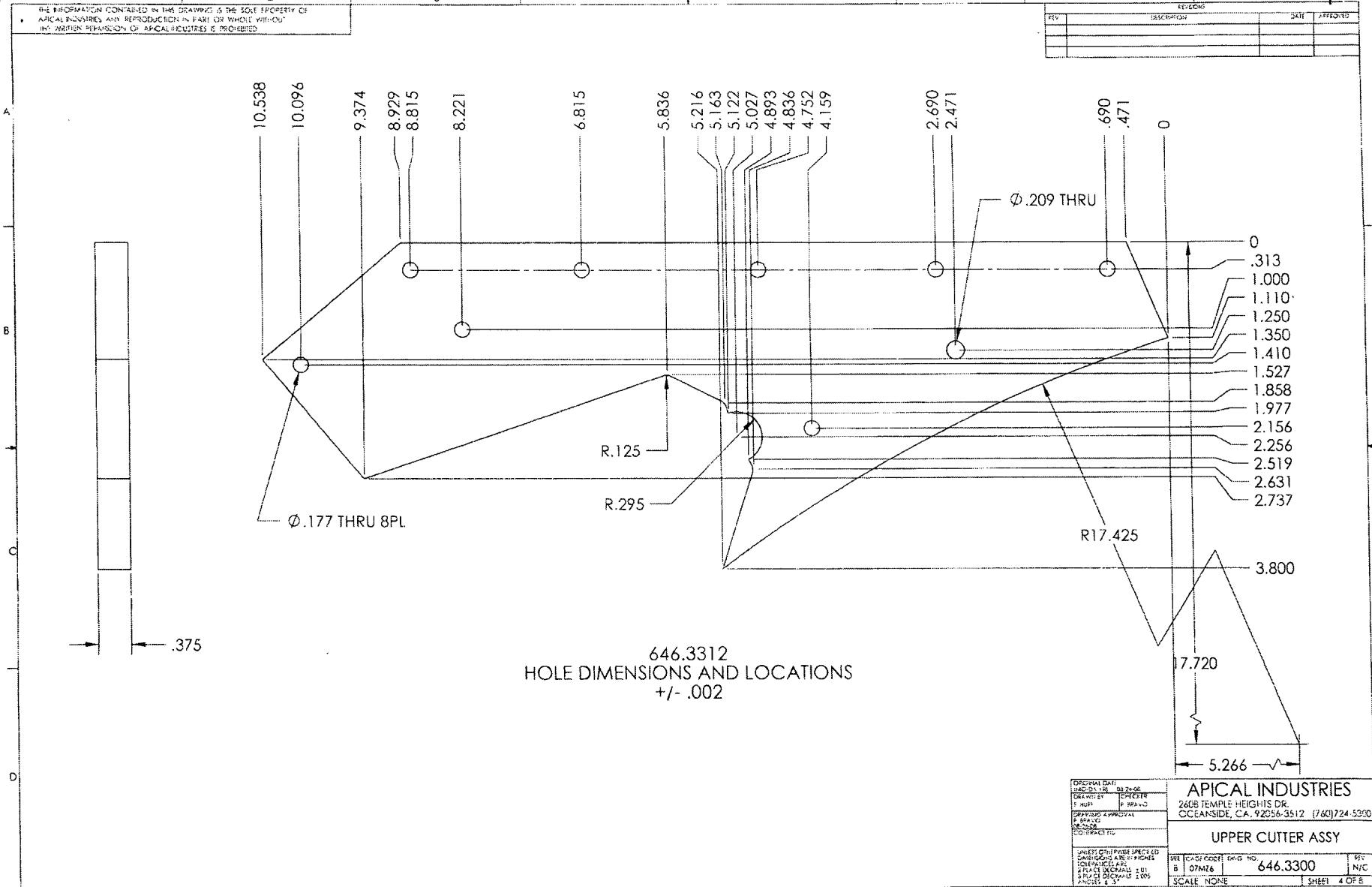
SECTION A-A

OPENING DATA	APICAL INDUSTRIES
NO.05149 16-25-06	
DRWNT BY: J. C. LEE	
INT'D BY: J. S. KELLY	
DRAWING APPROVAL	
COMPACT: 16	
UNLESS OTHERWISE SPECIFIED DRAWINGS ARE IN INCHES CONTRACTS ARE TO BE READ IN STRAIGHT DEGREES ± 10° ANGLES ± 3°	
DATE: 02/01/06	REV: B
P: DTM16	646.3300
SCALE: NONE	1 SHEET 3 OF 6

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2 3 4 5 6 7 8

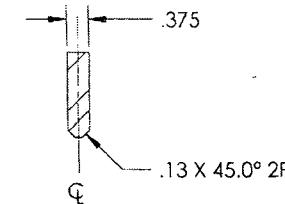
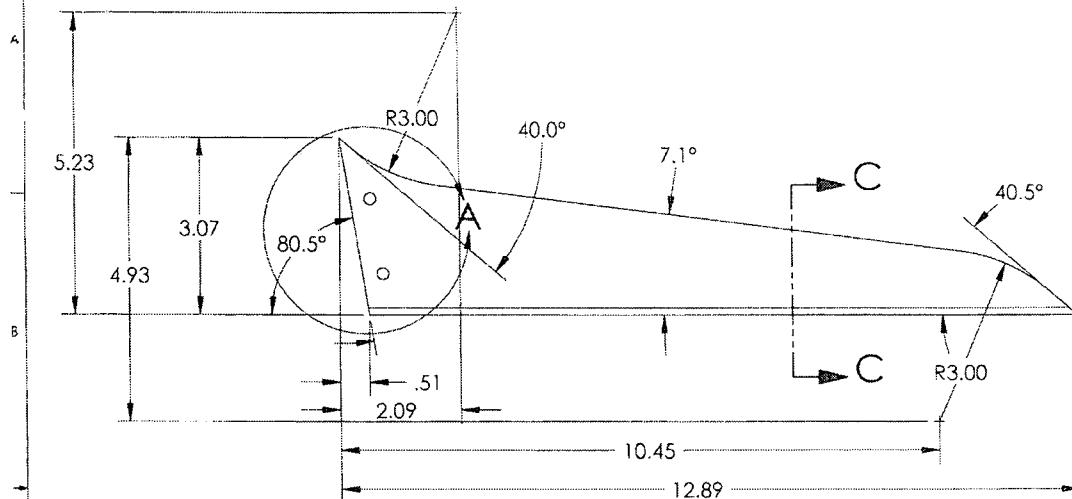
10843



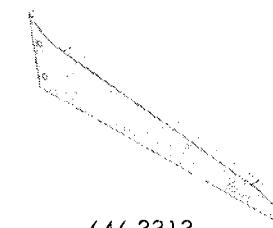
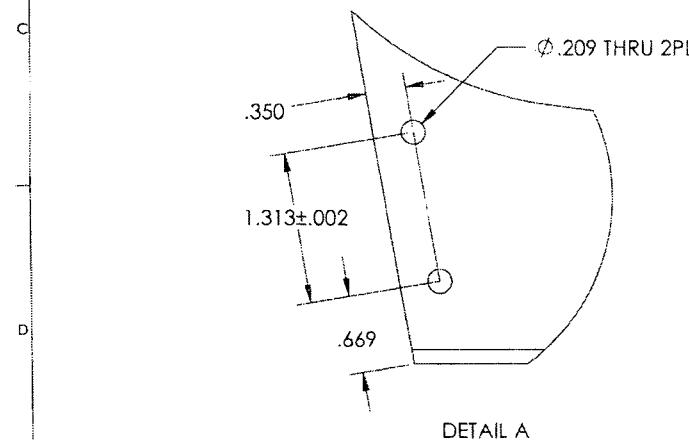
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REV.	DESCRIPTION	REVISIONS	
		DATE	APPROVED



SECTION C-1

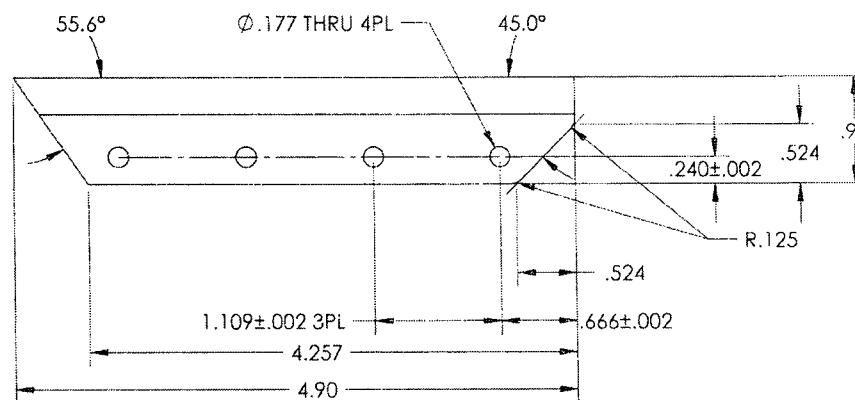
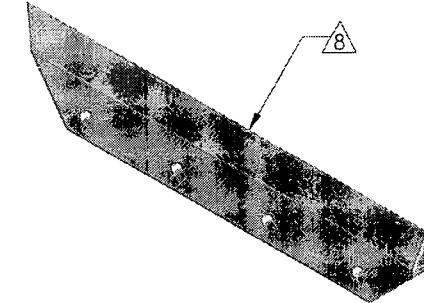


646.331

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108431

REF	DESCRIPTION	DATE	APPROVED



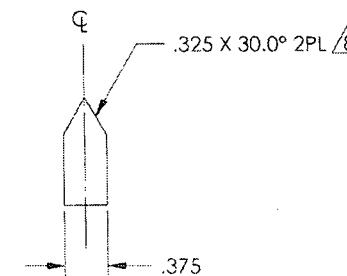
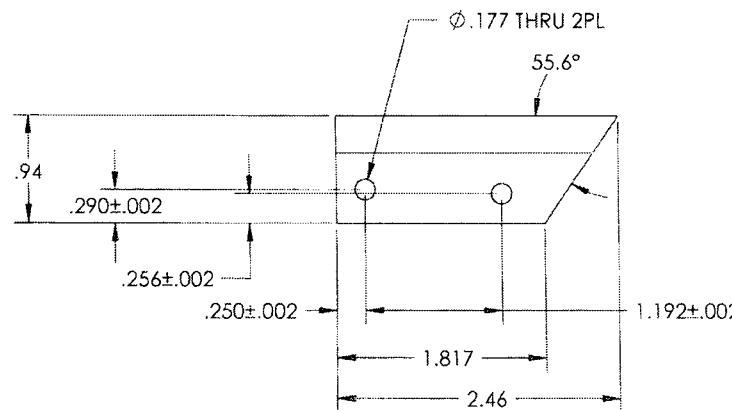
646.3314

MANUFACTURE DATE	APICAL INDUSTRIES
ITEM NO. 101	2608 TEMPLE HEIGHTS DR.
ITEM NAME	CICERO, IL CA. 92054-3512 (760)724-5320
ITEM DESCRIPTION	
ITEM QUANTITY	
ITEM UNIT OF MEASURE	
ITEM PRICE	
ITEM TOTAL	
UPPER CUTTER ASSY	
ITEM NUMBER	646.3300
ITEM DESCRIPTION	
ITEM QUANTITY	1
ITEM UNIT OF MEASURE	PC
ITEM PRICE	N/A
ITEM TOTAL	N/A

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ITEM NO.	DESCRIPTION	DATE	APPROVED



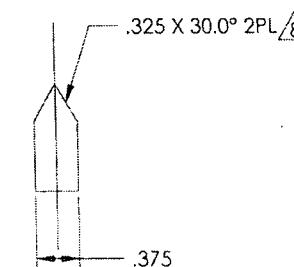
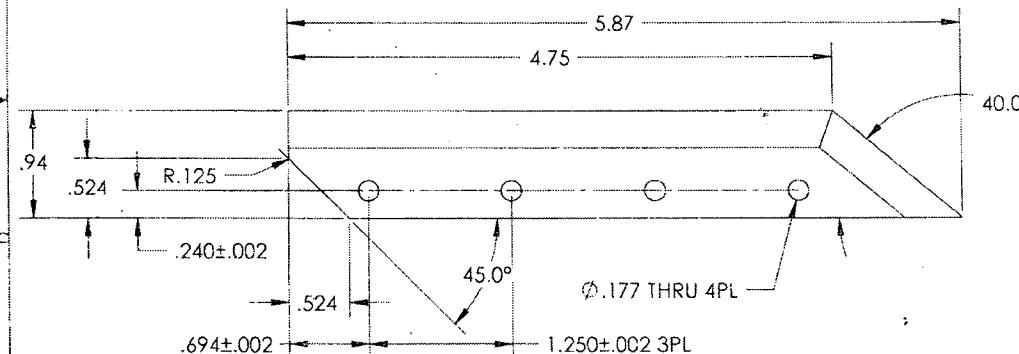
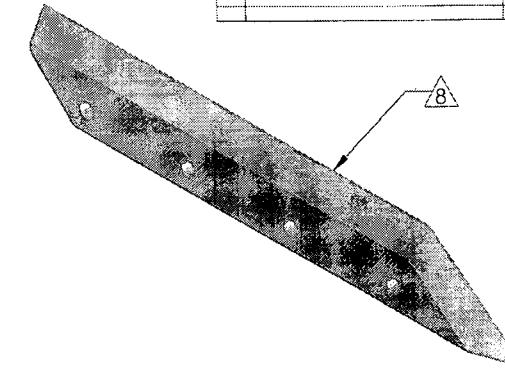
646.3315

DRAWN BY:	APICAL INDUSTRIES
SUPERVISED BY:	2608 TEMPLE HEIGHTS DR
PRINTED BY:	OCEANSIDE, CA 92056-3512 (760)724-5300
UPPER CUTTER ASSY	
DATE:	07/16
SCALE:	646.3300
REVISION:	N/A
SHEET 7 OF 8	

108431

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REV	DATE	DESCRIPTION	APPROVED



646.3316

ORIGINATOR DATE	APICAL INDUSTRIES		
MANUFACTURE DATE 08-21-08	DRAWN BY	CHECKED BY	APPROVED BY
	S. HUJU	R. BRAVO	
	DRAWING APPROVAL		
	PRINTED BY		
	SPECIAL NOTES		
	CORPORATE NO.		
THIS DRAWING IS THE PROPERTY OF APICAL INDUSTRIES INC. AND MAY NOT BE COPIED OR USED BY OTHERS			
S/N			
CLASS CODE			
Dwg. No.			
646.3300			
REV			
N/C			
SCALE NONE			
SHEET 6 OF 8			

DART AEROSPACE LTD	Work Order:	10843)
Description: Blade	Part Number:	646.3316
Inspection Dwg:	Rev: N/C	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
5.87	$\pm .010$	5.86	✓		MH-04	Caliper
4.75	$\pm .010$	4.75	✓			
.94	$\pm .010$	.938	✓			
.524	$\pm .005$	.524	✓			
.240	$\pm .002$	.2495	✓			
.524	$\pm .005$	.524	✓			
.694	$\pm .002$	.6945	✓		CN	
.177	$\pm .005$	.175	✓		MH-04	Caliper
.250	$\pm .002$	.250	✓			
.375	$\pm .005$	.376	✓			
.325-.385	$\pm .005$	.325-.385	✓			

oAs

Measured by:	<u>MH</u>	Audited by:	<u>40</u> 9-89	Preliminary Approval:	
Date:	15/11/05	Date:	13/11/07	Date:	

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	



560, boul. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8

Tél. 450 473-1884

Télécopieur/Fax administration 450 491-5498

Télécopieur/Fax production 450 491-6454

METCOR INC.**560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8**

Tél. : 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Rapport d'Inspection**Inspection Report**

BON DE TRAVAIL order	CHARGEMENT load
191246	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO22078		A2		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	13	58.0 - 60.0 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
85	24	<p>646.3013 (6) BLADES REFERENCE: 108153</p> <p>(10) 646.3014 BLADES REFERENCE 107626</p> <p>(12) 646.3314 BLADES REFERENCE 108506</p> <p>(12) 646.3315 BLADES REFERENCE 108498</p> <p>(12) 646.3316 BLADES REFERENCE 108431</p> <p>(33) 646.9711 BLADES REFERENCE 108731 MATERIAL: A2 58-62 RC</p> <p>CONTENANT: 1 BOÎTE DE CARTON</p> <p style="text-align: right;"><i>Nee 10</i></p>

Rene Del*26 Nov.*

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détailé
Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
191246	1

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

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1

COMMANDÉ DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO22078		A2		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results		
HARDNESS	58 - 62 HRC	13	58.0 - 60.0 HRC	
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
85	24	646.3013 (6) BLADES REFERENCE: 108183 (10) 646.3014 BLADES REFERENCE 107626 (12) 646.3314 BLADES REFERENCE 108506 (12) 646.3315 BLADES REFERENCE 108498 (12) 646.3316 BLADES REFERENCE 108431 (33) 646.9711 BLADES REFERENCE 108731 MATERIAL: A2 58-62 RC CONTENANT: 1 BOÎTE DE CARTON		

Operation	Temp. spécifiée Specified Temp	Temps de trempe Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
1.00 CONT. INIT.	LAVAGE		si nécessaire							

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

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Certificat de Conformité Détailé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
191246	1

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ON K6A 1K7

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1

Operation	Temp. spécifiée Specified Temp	Temps de trempe Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
2.00 PREPARING	COMPTAGE									
3.00 PREHEAT 1	1200	0:30	VAC			390				
4.00 PREHEAT 2	1500	0:30	VAC							
5.00 VAC HARDE	1800	1 hrs 30 minutes	VAC		AZOTE					
6.00 TEMPER	400+/-10°F	2 hrs	air			651				
7.00 TEMPER 2	400+/-10°F	2 hrs	air		651					
8.00 HARDN INS										
9.00 FINAL INSP							11-22-2013			11-22-2013

COMMENTAIRES / comments

Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été fait par rapport au TT. On certifie que le matériel a été fabriqué, échantilloné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

APPROUVÉ par / Approved by:

DATE: 2013-11-22

/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client./We certify that all the information on this report is exact and in accordance with the order requirements.